

SCIENTIST ON THE FRONTLINES: COMMANDER BENJAMIN ESPINOSA

Editor's Note:

A Colorado native, Cmdr. Benjamin Espinosa received his undergraduate degree at University of Colorado at Boulder, worked as an organic chemist for several years then realized he wanted to work on drug resistant tuberculosis and microbiology at Colorado State University in Fort Collins, where he received his doctorate. His work on vaccine development at Colorado State led him to join the U.S. Navy in March 2005.



(Photo courtesy of Cmdr. Espinosa)

What led you into the field of microbiology?

My mother was a pharmacologist, but she had a microbiology degree so I gravitated toward that because in a sense it was the “family business.”

Why were you so interested in tuberculosis?

I read about the prevalence and resurgence of it at the time, and realized how long it took to cure someone from TB, something like a six to nine month course of an intensive antibiotic treatment, and from that one article, I looked at it and said that’s what I want to do.

When did Navy Medicine become an option for you?

After I received my Ph.D. I became interested in working on vaccines for biological warfare agents. Things like anthrax and the plague. Looking into this field I realized the only way I could really do this type of

research was with the military. So I began interviews with the Army, and the Navy. The Navy showed me the opportunities and locations I could work at – everywhere from Italy to Peru – and I was sold.

What has your journey with Navy Medicine been like so far?

Navy Medicine really has been a fantastic organization that has allowed me to do everything I've ever wanted to do.

My first duty station was in Peru where I worked on tropical infectious diseases like Brucella, Malaria, Eastern Equine Encephalitis, and sexually transmitted infections. There I was able to be a part of the Navy response to several natural disasters and disease outbreaks.



(Photo courtesy of Cmdr. Espinosa)

I've also been able to deploy several times. Those were really the most exciting times in my Navy Medicine career. I deployed to Kuwait to deal with an H1N1 Flu outbreak there and to Liberia for the Ebola epidemic. The ability to see first-hand the results of my work like I did there was life changing. There aren't many times a scientist can say something they did directly and immediately saved lives and see the outcome almost instantly, but that was an instance where I got to see that. We worked directly with doctors and other local health care workers to shorten the window for diagnosing Ebola down from days or weeks to just several hours which was critical in fighting the epidemic.

The work that I've done with the Biological Defense Research Directorate, part of the Naval Medicine Research Center in Frederick, Maryland, has been fascinating because I was able to work with and develop these mobile laboratories that we're able to send out at a moment's notice during a crisis.

I love the ability to be able to deploy to a trouble spot versus trying to develop a solution from a bench in a lab somewhere removed. Navy Medicine has offered me a truly unique opportunity to do this.

What is your role in Navy Medicine today?

I'm currently working at the U.S. Navy Bureau of Medicine and Surgery (BUMED) serving as a program manager in Countering Weapons of Mass Destruction (CWMD). There, I liaise with the Joint Program Manager – Medical Countermeasures Systems as they work to provide our military forces and the nation with safe, effective, and innovative medical solutions to counter chemical, biological, and radiological (CBR) threats. They do this by facilitating the advanced development and acquisition of medical countermeasures, such as vaccines and therapeutics, to enhance our nation's CBR defense response capability.

The heart of what we do is collaborating with our Sailors and Marines as well as the other Services to ensure the solutions being developed will have a positive impact to the warfighter at the operational level.

For example, we recently partnered with the Defense Threat Reduction Agency to support their "Scientists at Sea" program that connects the military and civilian laboratory subject matter experts conducting CBR Defense research and technology initiatives with the front-line Sailors who actually use the tools and capabilities being developed. Too often in the past, the product developer and the end-user were too far removed from each other. This close dialogue between the operators and the researchers helps ensure that efforts are properly aligned to operational needs.

Sum up your career with Navy Medicine in one sentence?

It's wonderful being at the forefront of scientific efforts that actually make a difference in the world.